

RIBA Response

Environmental Audit Committee - Technological Innovations and Climate Change: Heat Pumps

The Royal Institute of British Architects champions better buildings, stronger communities and higher environmental standards through the practice of architecture and our 40,000 members. We provide the standards, training, support and recognition that put our members – in the UK and overseas – at the peak of their profession. With government and our partners, we work to improve the design quality of public buildings, new homes and new communities.

The Royal Institute of British Architects (RIBA) welcomes the opportunity to respond to the Environmental Audit Committee inquiry on heat pumps.

The RIBA welcomes the direction of travel signified by many of the measures proposed by Government in recent years to help the UK reach net zero.

However, we believe that there is a need for greater ambition on behalf of the Government if we are to significantly improve the performance and reduce the environmental impacts of the built environment.

Heat pumps are an effective way that homes can achieve low carbon heating. However, there are some issues that must be addressed to ensure that heat pumps are effective as possible.

The RIBA recommends:

- That fabric efficiency should be the primary consideration when designing a new home; any method of delivering heat, including heat pumps, should be secondary.
- That for existing homes, heat pumps form part of a “whole house” retrofit plan.
- That heat pumps are designed, specified, installed and operated correctly by an accredited tradesperson to ensure they are safe, cost effective and reduce carbon emissions.

New homes

The RIBA believes that fabric efficiency should be the primary consideration when designing a new home; any method of delivering heat, including heat pumps, should be secondary to fabric efficiency.

The Standard Assessment Procedure (SAP), which is the current methodology used to assess and compare the energy and environmental performance of buildings, does not relate to real world energy and carbon performance.

SAP is based on a per cent reduction from notional baseline building measurements which does not address poor design. In addition, SAP uses a gas boiler as default in the notional building which inflates the improvement in a new building if a more energy efficient heating system (for example, a heat pump) is used.

Therefore, using the current SAP and the installation of heat pumps may imply that new homes are more energy efficient than they are in reality. It is important, therefore, that we measure the operational energy usage of a home and replace SAP with a domestic version of a design for performance tool. Government should consult on this new tool and look to successful existing models, such as the Australian NABERS, CIBSE's tools on evaluating operational energy performance of buildings at the design stage (TM54 and DomEARM), Passivhaus Planning Package (PHPP) and Dynamic Thermal Simulation (DTS), as a starting points.

Existing homes

Fabric efficiency is also important when considering installing a heat pump into an existing home. It is important that heat pumps are installed in well insulated homes. This is because the lower the flow temperature of the heat pump, the higher it's efficiency. In a home without adequate insulation, the heat pump will require a higher flow temperature, which will cost more to run and have higher carbon emissions.

It is important, therefore, that for existing homes, a "whole house" retrofit plan, which includes considered individual measures that are installed at the right time and work together, is undertaken for successful energy efficiency works.

It was welcome to see the Government recently introduced the Simple Energy Advice (SEA) website, which is the central information resource for energy efficiency advice in England. However, we believe there is a role for more tailored advice through an expanded information hub. This will require additional funding capacity be allocated for the SEA, including expanding the information hub to provide access to trained advisors who can give customers tailored and personalised support. The advice given by the SEA must encourage a "whole house" retrofit plan to homeowners to plan upgrades incrementally in a way that ensures they are improving the energy efficiency of their home.

Protecting consumers

Heat pumps are an effective way that homes can achieve low carbon heating. It is essential, however, that heat pumps are designed, specified, installed and operated correctly to avoid high energy bills for the consumer.

Adequate training and education to ensure competence and skills within the supply chain is key to ensuring that heat pumps are installed in a safe and effective manner.

The Government has a key role to play in ensuring installations meet the highest standards, and that consumers are protected from spending on making substandard alterations to their home. The recent announcement that the Green Homes Grant would only apply for tradespeople who are part of the Trustmark accreditation scheme is a very positive development. We suggest this should be extended across Government policy regarding publicly funded energy efficiency works including the installation of heat pumps. This will help to provide quality assurance standards when works are being delivered.